

C L A I M S

1. A method of transmitting, over an ATM network, data flows generated in accordance with a connected mode transport protocol and formatted in packets in accordance with a non-connected mode network protocol, each packet containing a source address and a destination address, the method comprising the steps of:
- assigning, in advance, a set of virtual circuits of the ATM network to each pair of access points of the ATM network without allocating transmission rate resources to said virtual circuits;
 - when a first access point of the ATM network receives a request, formulated in accordance with said connected mode protocol, to establish a connection between a source address and a destination address accessible via a second access point of the ATM network, selecting an available virtual circuit from the set assigned to the pair comprising said first and second access points of the ATM network and transmitting on the selected virtual circuit an ATM resource management cell containing a message requesting activation of the selected virtual circuit;
 - when said ATM resource management cell is received by a node of the ATM network located on the selected virtual circuit, assigning a transmission rate resource, if available, to the selected virtual circuit.
2. A method as claimed in claim 1, wherein the activation request message contains an indication of a transmission rate resource required for the connection.
3. A method as claimed in claim 2, wherein the transmission rate resource indicated in the activation request message represents a reference rate on the connection, and wherein ATM resource management cells containing flow adjustment messages relating to the reference rate are transmitted on the virtual circuit selected by the first access point of the ATM network and acknowledged on the virtual circuit selected by the second access point of the ATM network.
4. A method as claimed in claim 1, wherein transmission of the ATM resource management cell containing the activation request message is

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immediately followed by transmission on the selected virtual circuit of at least one ATM cell carrying said connection establishment request.

5. A method as claimed in claim 4, wherein each ATM cell following the activation request message on the selected virtual circuit and carrying said connection establishment request is discarded by a node of the ATM network located on the selected virtual circuit if the transmission rate resource to be allocated to the selected virtual circuit is not available.
10. A method as claimed in claim 5, comprising the steps of:
 - starting a timer at the first access point of the ATM network when transmitting the ATM resource management cell containing the activation request message;
 - if no acknowledgement of said connection establishment request carried by at least one ATM cell following the activation request message on the selected virtual circuit is received from the second access point of the ATM network by the first access point of the ATM network before the timer expires, transmitting on the selected virtual circuit an ATM resource management cell containing a request to deactivate the selected virtual circuit.
15. A method as claimed in claim 6, wherein said timer has a duration corresponding to that of a retransmission time stipulated by said connected mode transport protocol.
20. A method as claimed in claim 6, comprising the steps of:
 - if a repetition of the connection establishment request is received by the first access point from the source address before receiving an acknowledgement of said connection establishment request from the second access point of the ATM network, re-transmitting on the selected virtual circuit at least one ATM cell carrying said connection establishment request;
 - when the re-transmitted ATM cell carrying said connection establishment request is received by a node of the ATM network which has discarded the ATM cell following the activation request message on the selected virtual circuit and carrying said connection establishment request,

allocating a transmission rate resource, if available, to the selected virtual circuit.

9. A method as claimed in claim 1, wherein transmission rate resources are allocated to two separate ATM virtual circuits for two opposite directions of
5 communication between the first and second access points.

10. An interface device for a first access point located at a user-network interface of an ATM network, for transmitting over said ATM network data flows generated in accordance with a connected mode transport protocol and formatted in packets in accordance with a non-connected mode network
10 protocol, each packet containing a source address and a destination address, the device comprising :

- means for assigning, in advance, a set of virtual circuits of the ATM network to at least one pair consisting of said first access point of the ATM network and a second access point of the ATM network, without
15 allocating transmission rate resources to said virtual circuits;
- means for selecting an available virtual circuit from the set assigned to the pair comprising said first and second access points of the ATM network in response to receipt of a request, formulated in accordance with said connected mode protocol, to establish a connection between a source address and a destination address accessible via the second access point;
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- means for transmitting on the selected virtual circuit an ATM resource management cell containing a message requesting activation of the selected virtual circuit and for allocating transmission rate resources to
25 the selected virtual circuit.

11. An interface device as claimed in claim 10, wherein the activation request message indicates a transmission rate resource representing a reference rate on the connection and the transmission means are arranged to transmit on the selected virtual circuit ATM resource management cells
30 containing flow adjustment messages relative to the reference rate.

12. An interface device as claimed in claim 10, wherein the transmission means are arranged to transmit on the selected virtual circuit, immediately after

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the ATM resource management cell containing the activation request message, at least one ATM cell carrying said connection establishment request.

13. An interface device as claimed in claim 12, further comprising:

- means for starting a timer when transmitting the ATM resource management cell containing the activation request message;
- means for transmitting on the selected virtual circuit an ATM resource management cell containing a message requesting deactivation of the selected virtual circuit if no acknowledgement of said connection establishment request carried by at least one ATM cell following the activation request message is received on the selected virtual circuit before the timer expires.

14. An interface device as claimed in claim 13, wherein said timer has a duration corresponding to that of a retransmission time stipulated by said connected mode transport protocol.

15. 15. An interface device as claimed in claim 13, further comprising :

- means for retransmitting on the selected virtual circuit at least one ATM cell carrying said connection establishment request if a repetition of the connection establishment request is received from the source address before receiving an acknowledgement of said connection establishment request.

16. An interface device as claimed in claim 10, comprising means for allocating transmission rate resources to two separate ATM virtual circuits for two opposite directions of communication between the first and second access points.

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